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Job No: CTCE/BBMP/W.No.12/KRIDL/BM/AIV/2013-14 19.08.2013

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Source / Location	Hotmix Plant, Bangalore
Type of Mix	Bituminous Macadam
Date of Testing	19.08.2013

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	388	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	303	
4	Aggregate Impact value = percent fines	21.76	21.91	
	100* (W_2/W_1)%			**21.83**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30%

Note:

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Job No: CTCE/BBMP/W.No.12/KRIDL/BM/Shape.T/2013-14 : 19.08.2013

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager (West),** KRIDL, Bangalore.
Name of Work	: Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	: EE/DD/WO/122/2011-12 Dated: 10.02.2012
Technical Reference	: IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	: Bituminious Macadum
Date of Testing	: 19.08.2013

Flakiness Index = **11.06%**

Elongation Index = **13.23%**

Result : Combined Flakiness & Elongation index **24.29%**

Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

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Job No: CTCE/BBMP/W.No.12/KRIDL/BM/Stripping/2013-14 20.08.2013

Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Type of Mix	Bituminous Macadam
Date of Testing	20.08.2013

Type of binder : 80/100
Percentage of binder used : 5.0% by wt.
Total weight of aggregate : 200 g
Total weight of binder : 10.0 g
Temperature of water-bath : 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	3.1	3.20	96.80
2	3.2		
3	3.3		

Comments:

→ Minimum allowable Aggregate retained coating for Bituminous Macadam is 95%

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Job No: CTCE/BBMP/W.No.12/KRIDL/BM/Sp_Wa/2013-14

20.08.2013

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Source / Location	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	20.08.2013

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 2	
1	Weight of aggregate suspended in water with the basket	W_1 g	2024	2022	2021	
2	Weight of basket suspended in water	W_2 g	750	750	750	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1274	1272	1271	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2016	2012	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	741	744	741	
6	Weight of oven dried aggregate	W_4 g	2000	2001	2003	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.699	2.690	2.703	2.701
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.755	2.745	2.736	2.746
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.75%	0.75%	0.45%	0.60%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM/Bitumen/2013-14

20.08.2013

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	EE/DD/WO/122/2011-12 Dated: 10.02.2012
SAMPLE I/D	Roads in Abbigere village in ward no.12.
DATE OF TESTING	20.08.2013

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	482.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	17.50
7. Bitumen content in %	3.60	3.50
8. Average	**3.55**	

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM/Bitumen/2013-14 20.08.2013

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	EE/DD/WO/122/2011-12 Dated: 10.02.2012
SAMPLE I/D	Roads in Abbigere village in ward no.12.
DATE OF TESTING	20.08.2013

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	36.32	7.54	7.54	92.46	90-100
13.2	93.62	19.42	26.96	73.04	56-88
4.75	255.5	53.01	79.97	20.03	16-36
2.36	46.31	9.61	89.57	10.43	4-19
0.3	31.22	6.48	96.05	3.95	2-10
0.075	5.19	1.08	97.13	2.87	0-8

Þ The results indicated above are based on the tests carried	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	31.25	6.48	6.48	93.52	90-100
13.2	68.52	14.20	20.68	79.32	56-88
4.75	256.3	53.12	73.80	26.20	16-36
2.36	50.22	10.41	84.21	15.79	4-19
0.3	35.21	7.30	91.50	8.50	2-10
0.075	18.23	3.78	95.28	4.72	0-8

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20.08.2013

Aggregate Gradation Test

IS : 2386 Part I

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Sample ID	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	20.08.2013

Total Weight of Sample: **5200** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	350	6.73	6.73	93.27	90-100	
13.2	1680	32.31	39.04	60.96	56-88	
4.75	1415	27.21	66.25	33.75	16-36	
2.36	990	19.04	85.29	14.71	4-19	
0.3	415	7.98	93.27	6.73	2-10	
0.075	140	2.69	95.96	4.04	0-8	

Total Weight of Sample: **5300** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH specification
19	265	5.00	5.00	95.00	90-100	
13.2	1590	30.00	35.00	65.00	56-88	
4.75	1850	34.91	69.91	30.09	16-36	
2.36	890	16.79	86.70	13.30	4-19	
0.3	420	7.92	94.62	5.38	2-10	
0.075	125	2.36	96.98	3.02	0-8	

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